

WHAT IS CLAIMED IS:

1. A method of correcting transfer of a thin material transfer apparatus comprising a transfer roller which is rotated in accordance with a number of input transfer pulses; a sensor which detects a front end of a thin material transferred by the transfer roller; and a processing unit which is disposed downstream from the sensor, and performs a predetermined process on the transferred thin material, the method comprising the steps of:

detecting a front end of a thin material by the sensor, and transferring the thin material from a position of the sensor by a transfer pulse number corresponding to a specified distance between the sensor and the processing unit, and a transfer pulse number corresponding to a reference transfer range from a position of the processing unit;

performing the process in the processing unit on the transferred thin material, thereby obtaining a first processed thin material portion;

transferring the thin material by a transfer pulse number corresponding to the reference transfer range;

performing the process in the processing unit on the transferred thin material, thereby obtaining a second processed thin material portion;

calculating a first correction value for correcting a transfer error based on the reference transfer range and a

measured length of the second processed thin material portion,  
and calculating a second correction value for correcting a  
transfer error based on measured lengths of the first and second  
processed thin material portions; and

correcting the transfer from the sensor position to the  
processing unit position, and the transfer from the processing  
unit position based on ~~based on~~ the first and second correction  
values.

2. A method according to claim 1, wherein the step of  
correcting the transfer range of the thin material from the sensor  
position to the processing unit position, and the transfer range  
of the thin material from the processing unit position, includes  
the steps of:

calculating a first transfer pulse number required for  
transferring the thin material from the sensor position to the  
processing unit position based on the first and second correction  
values, the specified distance, and a specified transfer pitch  
per pulse, and calculating a second transfer pulse number  
required for transferring the thin material by a predetermined  
range from the processing unit position based on the first  
correction value, the predetermined range, and the specified  
transfer pitch per pulse; and

transferring the thin material from the sensor position  
by a sequence of the first transfer pulse number and the second

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transfer pulse number.

3. A method according to claim 2, wherein the first transfer pulse number is calculated from an equation of  $\{(L_{sp} + C_2)/P\} \times C_1$ , and the second transfer pulse number is calculated from an equation of  $(L_r/P) \times C_1$ , wherein:

$L_{sp}$  is the specified distance between the sensor and the processing unit,

$P$  is the specified transfer pitch per pulse,

$C_1$  is the first correction value,

$C_2$  is the second correction value, and

$L_r$  is the predetermined range of the thin material transferred from the processing unit position.

4. A method according to claim 1, wherein the first correction value is calculated from an equation of  $L_0/L_1$ , and the second correction value is calculated from an equation of  $(L_2 - L_1)$ , wherein:

$L_0$  is the reference transfer range,

$L_1$  is the measured length of the first processed thin material portion, and

$L_2$  is the measured length of the second processed thin material portion.

5. A method according to claim 4, wherein the step of

correcting the transfer range of the thin material from the sensor position to the processing unit position, and the transfer range of the thin material from the processing unit position, includes the steps of:

calculating a first transfer pulse number required for transferring the thin material from the sensor position to the processing unit position based on the first and second correction values, the specified distance, and a specified transfer pitch per pulse, and calculating a second transfer pulse number required for transferring the thin material by a predetermined range from the processing unit position based on the first correction value, the predetermined range, and the specified transfer pitch per pulse; and

transferring the thin material from the sensor position by a sequence of the first transfer pulse number and the second transfer pulse number.

6. A method according to claim 5, wherein the first transfer pulse number is calculated from an equation of  $\{(L_{sp} + C_2)/P\} \times C_1$ , and the second transfer pulse number is calculated from an equation of  $(L_r/P) \times C_1$ , wherein:

$L_{sp}$  is the specified distance between the sensor and the processing unit,

$P$  is the specified transfer pitch per pulse,

$C_1$  is the first correction value,

$C_2$  is the second correction value, and  
 $L_R$  is the predetermined range for the thin material transferred from the processing unit position.

7. A thin material transfer apparatus comprising:

a roller driving unit which rotates a transfer roller in accordance with a number of input transfer pulses;

a sensor which detects a front end of a thin material transferred by the transfer roller;

a processing unit which is disposed downstream from the sensor, and performs a predetermined process on the transferred thin material;

a first calculator which calculates a first transfer pulse number for transferring the thin material from a position of the sensor to a position of the processing unit position, the first transfer pulse number being calculated based on first and second correction values for correcting a transfer error, the first correction value being calculated based on a reference transfer range and a measured length of a second processed thin material portion, the second correction value being calculated based on measured lengths of the first and second processed thin materials portion, the reference transfer range being a predetermined range which the thin material is transferred from the position of the processing unit, the first processed thin material portion being produced by transferring the thin material from the

position of the sensor by a transfer pulse number corresponding to a specified distance between the sensor and the processing unit after the sensor detects the front end of the thin material, and transferring from the position of the processing unit by a transfer pulse number corresponding to the reference transfer range, performing the process in the processing unit, the second processed thin material portion being produced by transferring the thin material by a transfer pulse number corresponding to the reference transfer range, performing the process in the processing unit on the transferred thin material;

a second calculator which calculates a second transfer pulse number for transferring the thin material from the processing unit position based on the first correction value; and

a control unit which controls the roller driving unit to transfer the thin material from the sensor position by a sequence of the first transfer pulse number and the second transfer pulse number.

8. A thin material transfer apparatus according to claim 7, wherein the first correction value is calculated from an equation of  $L_0/L_1$ , the second correction value is calculated from an equation of  $(L_2 - L_1)$ , the first transfer pulse number is calculated from an equation of  $\{(L_{sp} + C_1)/P\} \times C_1$ , and the second transfer pulse number is calculated from an equation of  $(L_r/P)$

$\times C_1$  , wherein:

$L_0$  is the reference transfer range for the processed thin material,

$L_2$  is the measured length of the second processed thin material portion,

$L_1$  is the measured length of the first processed thin material portion,

$L_{sp}$  is the specified distance between the sensor and the processing unit,

$P$  is a transfer pitch per pulse,

$C_1$  is the first correction value,

$C_2$  is the second correction value, and

$L_R$  is a predetermined range for the thin material.